

REMARKS

Claims 1-26 are all the claims currently under examination in the present application.

It is noted that the claim amendments, if any, are made only to assure grammatical and idiomatic English and improved form under United States practice, and are not made to distinguish the invention over the prior art or narrow the claims or for any statutory requirements of patentability. Further, Applicant specifically states that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 1-10 stand rejected under 35 U.S.C. §103(a) over Admitted Prior Art (hereinafter “APA”) in view of Chen, et al. (US Patent Application Publication No. 2001/0000221). Claims 11-26 stand rejected under 35 U.S.C. §103(a) over Chen in view of Kovacevic (US Patent Application Publication No. 2002/0178274). These rejections are respectfully traversed in the following discussion.

THE CLAIMED INVENTION

The claimed invention, as exemplarily defined by independent claim 1, is directed to mobile radio equipment. The radio equipment includes a radio transmitter/receiver, a transmission unit, an application unit, a decoder, a memory, an input/output section, a load data output section, a load data input section, a judge section, and a transmission controller.

The radio transmitter/ receiver transmits and receives radio data. The transmission unit converts data received by the radio transmitter/ receiver. The application unit executes applications. The decoder decodes data output from the transmission unit. The memory

Application No. 10/698,391
Attorney Docket No. DP-977 US (MAR.092)

stores the decoded data output from the decoder. The input/ output section inputs and outputs the decoded data output from the decoder.

The load data output section outputs the decoded data output from the decoder as load data. The load data input section inputs the decoded data output from the decoder as load data. The judge section judges the load data on a preset threshold value. The transmission controller controls transmission rate based on a judgment made by the judge section.

In conventional mobile radio equipment, when establishing communication, the mobile radio equipment informs a radio base station of the maximum transmission rate at which it can receive data from the base station. Subsequently, the radio base station adjusts resources to allocate resources to the mobile radio equipment newly connected thereto. After that, the radio base station determines the transmission rate for the mobile radio equipment, and enters into communication with the radio equipment.

In the radio communication system of the conventional technique, a radio line is operated at a data transfer rate or communication rate which can be selected from predetermined values regardless of whether or not communication has already been established. A radio communication terminal changes the communication rate in response to a request from a radio base station. The radio base station informs a correspondent terminal as to the change of the communication rate.

However, in the above-described conventional techniques, the resources of the radio base station are limited, and maximum efficiency cannot be achieved. Moreover, although the mobile radio equipment requests the maximum rate of data transmission, it might not have a decoding capability commensurate with the maximum transmission rate, even if its radio transmission function is sufficient to receive data normally at the maximum rate.

Application No. 10/698,391
Attorney Docket No. DP-977 US (MAR.092)

The present invention, on the other hand, provides mobile radio equipment and a method of controlling transmission rate for the mobile radio equipment.

THE PRIOR ART REJECTIONS

The Chen Reference

The Examiner alleges that Chen discloses certain features of the claimed invention. Applicant respectfully traverses this rejection.

Claims 1-10 stand rejected under 35 U.S.C. §103(a) over APA in view of Chen.

Applicant respectfully submits that there are features of the claimed invention which are not disclosed or suggested by Chen.

Regarding independent claim 1, Chen fails to disclose or suggest at least “Mobile radio equipment comprising: a radio transmitter/ receiver for transmitting/ receiving radio data; a transmission unit for converting the received data received by the radio transmitter/ receiver; an application unit for executing applications; a decoder for decoding the data output from the transmission unit; a memory for storing the decoded data output from the decoder; an input/ output section for inputting/ outputting the decoded data output from the decoder; a load data output section for outputting the decoded data output from the decoder as load data; a load data input section for inputting the decoded data output from the decoder as load data; a judge section for judging the load data on a preset threshold value; and a transmission controller for controlling transmission rate based on a judgment made by the judge section,” as recited in the claim.

The Examiner alleges that Chen discloses, “*a load data output section for outputting the decoded data output from the decoder as load data (see figure 4, the data transfer to*

Application No. 10/698,391
Attorney Docket No. DP-977 US (MAR.092)

processor 330 at the output decoder, [0051-0053]." Office Action, p. 3.

However, Chen fails to disclose or suggest a load data output section for outputting the decoded data output from the decoder as load data.

Instead, Chen discloses only a technique for detecting zero rate frames in a received data transmission. No load data output section is disclosed or suggested between Frame Decoder 410 and Processor 330. "FIG. 4 shows a block diagram of the circuitry used to detect zero rate using the sum of the squared symbols. The soft decision symbols from symbol accumulator 412 are provided to a sum of squared symbols element 422. Element 422 squares each received soft decision symbol in a particular frame and sums the squared symbols within the frame. The sum result represents the computed energy for the frame and is provided to processor 330. In an embodiment, processor 330 considers two hypotheses for the computed energy value, which are: H_0 -- the computed energy contains only noise, and H_1 -- the computed energy contains signal plus noise. Specifically, processor 330 determines whether the computed energy is likely to contain only noise (i.e., hypotheses H_0) or signal plus noise (i.e., hypothesis H_1). Based on the result of this determination, a received frame is indicated as being erased or zero rate." Chen, para. [0053-0056]; Fig. 4. CRC circuit 416 is disclosed between Decoder 414 and Processor 330, but is not a load data output section. "CRC circuit 416 provides a one-bit result for each checked frame. In a specific implementation, the CRC result is a logic zero ("0") if the CRC check indicates a good frame and a logic one ("1") if the CRC check indicates a frame that is not good (i.e., erased or empty)." Chen, para. [0040]; Fig. 4.

The Examiner alleges that Chen discloses, "a load data input section for inputting the decoded data output from the decoder as load data (see figure 4, the data receive at the

Application No. 10/698,391
Attorney Docket No. DP-977 US (MAR.092)

decoder, [0042-0044])." Office Action, p. 3.

However, Chen fails to disclose or suggest a load data input section for inputting the decoded data output from the decoder as load data.

Chen discloses that the data output from Decoder 414 goes to CRC Circuit 416, discussed above, and Encoder 424 (and then as an input to Dot Product 426) to detect zero rate frames, as discussed above.

Further, the Examiner alleges that, "*the data receive[d] at the decoder*" discloses the feature of, "a load data input section for inputting the decoded data output from the decoder as load data," as recited in the claim. Applicant submits that data received at the decoder cannot disclose the decoded data output from the decoder, as such an interpretation would be an infinite loop. Therefore, the Examiner has failed to allege Chen discloses the plain meaning of the claimed feature. The Examiner is respectfully requested to indicate precisely where the reference is alleged to disclose "a load data input section for inputting the decoded data output from the decoder as load data."

The Examiner alleges that Chen discloses, "*a transmission controller for controlling transmission rate based on a judgment made by the judge section (see figure 4, [0043-0052]).*" Office Action, p. 3.

However, Chen fails to disclose or suggest a transmission controller for controlling transmission rate based on a judgment made by the judge section.

Instead, Chen discloses adjusting transmission power. "*In an IS-2000 system, a power control mechanism is provided to adjust the transmit power of the forward link signal based on the decoded forward link frames at the mobile station. The mobile station decodes the forward link frames and determines whether the frames are good, erased, or not transmitted.*

Application No. 10/698,391
Attorney Docket No. DP-977 US (MAR.092)

The base station is instructed to adjust the forward link transmit power level based on the decoded frames. For example, the base station can be instructed to decrease its transmit power to the mobile station if a decoded frame is good, increase the transmit power if the decoded frame is bad (or erased), and do nothing if no transmission (or zero rate) is detected.” Chen, para. [0043].

Thus, Chen fails to disclose at least these features of independent claim 1.

Independent claims 2 and 11-14 recite similar features to those discussed above. The rejections of claims 2 and 11-14 are traversed on substantially similar basis.

Claims 3-10 and 15-26 depend from one of the above independent claims, and inherit all features and limitations thereof. Applicant submits that claims 2-10 and 15-26 are patentable for at least this reason, as well as for the additional features they recite.

Therefore, Applicant respectfully requests the Examiner reconsider and withdraw the rejection of claims 1-26 over APA in view of Chen or Chen and Kovacevic.

Application No. 10/698,391
Attorney Docket No. DP-977 US (MAR.092)

CONCLUSION

In view of the foregoing, Applicant submits that claims 1-26, all the claims presently under examination in the application, are patentably distinct over the prior art of record and are allowable, and that the application is in condition for allowance. Such action would be appreciated.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned attorney at the local telephone number listed below to discuss any other changes deemed necessary for allowance in a telephonic or personal interview.

To the extent necessary, Applicant petitions for an extension of time under 37 CFR §1.136. The Commissioner is authorized to charge any deficiency in fees, including extension of time fees, or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

Date: 10 October 2007



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